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Creation of new varieties of vegetables and melon crops with good quality and high yield

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Abstract. *More than 40 kinds of vegetable and melons are grown in Uzbekistan. From the main vegetable crop varieties tomatoes, cucumbers, onions, carrots, cabbage, beets, sweet and spicy peppers, eggplant, greens, watermelon, melon, pumpkin are planted in large fields. In recent years, export-oriented tours such as rose cabbage, Chinese cabbage, broccoli, kohlrabi, daikon from less common vegetable crops are gaining ground.*

The soil-climatic conditions of Uzbekistan are rich in vitamins, environmentally friendly, very suitable for the cultivation of export-oriented products. The length of the days of the groom in our country and the high temperature increase the amount of biologically active substances and vitamins contained in the products of vegetables, melons. This is increasing the demand for our products. Today, tomatoes, cucumbers, onions, carrots, cabbage, soup beets, sweet and spicy peppers, eggplant, Redis, greens, cauliflower, broccoli, kohlrabi, iceberg salad, watermelon, melon products are exported from vegetable crops. From Uzbekistan in January-July, 2020 amounted to 147.1 million of US dollars, vegetables were exported.

In order to increase the export potential, more than 60 varieties of vegetables and melons have been created at the Research Institute of vegetable, melons and potatoes in recent years.

The main style of our selection works is separated from the collection the forms of motherhood and chattering works are conducted. Descendants of hybrids are divided on the basis of tests, prospective forms are selected. Perspective lines are divided into perspectives for a test the new variety in standard variety. Then, small and large varieties are tested with zoned varieties in Test nurseries. At the same time, primary seeding of perspective lines is organized. Prospects based on the results of the competition and production will be submitted to the state variety test Commission. On the basis of this method, a selection of tomato, cucumber, onion, watermelon and melon crops is carried out. This article describes the results of the selection work obtained in recent years.

Key words*: selection of vegetables and melon crops, tomato, onion, cucumber, watermelon, melon, new line, variety, harvest.*

INTRODUCTION.

Varieties created in Uzbekistan are heat-resistant, adapted to local conditions, but as a result of long-term cultivation of varieties lose their quality indicators, change of environmental conditions, interlacing of varieties with each other, as a result of mutations and mechanical interventions, the purity of varieties decreases and it is required to replace them with new varieties [1; 8; 9; 14].

Breeding is an inexhaustible process and consists in improving crops by man, creating new species. Demand for varieties and hybrids is increasing by product manufacturers as well as domestic and foreign consumers [10; 11; 14].

The actual issue of creating new varieties and hybrids suitable for domestic, external consumer requirements, suitable for local soil-climatic conditions arising from today's

requirements of vegetable and melons crops. Selection work is required to create varieties based on the demand for the product. If the product is used in a new one, it is necessary to take into account the fact that the quality of the fruit is high, taking into account the technological parameters of the processing industry, as well as long-distance transport resistance for export, the appearance will be beautiful. While taking into account the direction in which new varieties are used, they are fertile, resistant to diseases and unfavorable conditions of the external environment, suitable for transport in hard, the quality of fruits should be high and rich in vitamins [14].

After Uzbekistan gained independence, attention was paid to the selection of vegetable and melons, and our varieties began to be directly exported to the world market. And this shows the stable pace of economic development in the Republic, the proportion of macroeconomics, the stable growth of the standard of living of the population at a time when many problems remain in the world economy and is the basis for strengthening the position of our country in the world market.

As a result of the radical reform in the years of independence of the diversified agriculture, which occupies an important place in the economy of Uzbekistan, full satisfaction of the population's needs for vegetable and melons products is achieved. But, nevertheless, life itself shows the need for a more effective organization of work on the selection of vegetable-vegetable varieties. Therefore, it is very important to create scientific-based export-oriented varieties and hybrids of vegetable-melons selection, as well as to introduce them into production by establishing selection-breeding.

Soil-climatic conditions of Uzbekistan are suitable for the cultivation of quality products from vegetable and melons crops. The length of the days of the groom in our country and the high temperature increase the amount of biologically active substances and vitamins contained in the products of vegetables, melons. This is increasing the demand for our products.

In recent years, as a result of cooperation with the All-Russian Scientific Research Institute of selection and seed production of vegetable crops, The Scientific Research Institute of potato and vegetable production of Kazakhstan, the World Vegetable Center and other organizations, the State Register of agricultural crops of the Republic of Uzbekistan has increased the number of less common vegetable crops [3; 13].

In connection with the development of the processing industry in our country –conservation, freezing, drying, increased export salinity, there was a need to create varieties suitable for the use of vegetable crops in different directions.

For the use of vegetables and melons in each direction, the varieties are subject to their own requirements. Therefore, it is required to create varieties suitable for use in each direction. Farmer and peasant farms require varieties that are high in yields, fruits and technological qualities, resistant to diseases. At the same time, as a result of long-term cultivation of varieties, quality indicators are lost, environmental conditions are changed, the varieties are confused with each other, as a result of mutations and mechanical interventions, the purity of the varieties decreases and it is required to replace them with new varieties [4; 11; 12].

Selection works are carried out in large areas of the Republic with tomato, onion, cucumber, watermelon and melon types. Processing, consumption and export of vegetables and melons are carried out on the basis of maturing, medium and late maturing varieties [5; 16].

The creation of varieties created in local conditions, suitable for each soil-climatic conditions, has been proved by scientists and producers. Varieties and hybrids of cultivated vegetables and melons imported from foreign countries do not give a high yield in all of our conditions and are inferior to local varieties in terms of quality indicators. It satisfies the demand of consumers in connection with the high level of quality indicators of varieties created in local conditions [17].

In Uzbekistan, vegetable crops are grown in open space from February to November. Therefore, for the types of vegetable crops, maturing, middle-aged and late-maturing varieties are required. Varieties should be fertile, resistant to various environmental conditions and diseases, fruit quality is high, Woody and exportbop. Selectors are required to create new varieties, which include all these features [7; 17].

Creating a new variety is a long process, consisting of several stages. Will be created navni model. Initially, the collection of varieties is studied, the forms of parenthood are separated and chatting is carried out. In order to test the hybrids of the first and second generation and create a new breed, a competition of perspective forms is held. From the drawing and the next generation of hybrids, the lines are separated by a single selection. Prospective lines are divided into prospects for the new nav tested with standard nav. Then, small and large varieties are tested with zoned varieties in Test nurseries. At the same time, primary seeding of perspective lines is organized. Prospects based on the results of the competition and production will be submitted to the state nav test Commission. 10-12 years are spent on the creation of one variety [7].

Research methods.

The experiments were conducted on the experimental fields of the scientific research institute of vegetables, melons and potatoes. The institute is located in Zangiota District of Tashkent region. The climate of the region is similar to the conditions of most vegetable farms located in the flat part of Uzbekistan.

Experiment the soil of the area is typical burlap soil, where previously watered, the sizot water is located at a depth of 6-7 meters, the amount of gross humus in the soil is 0,632-

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0,970%, nitrogen 0,062-0,133%, phosphorus 0,122-0,172% and potassium 1,684-2,215%, in one kilogram of soil is it was in the range of 196,1-282,4 mg/kg. The soil of the experimental area is less saline.

Breeding work is carried out by hybridization with the use of individual selection to obtain constant offspring. As initial pairs for crossing, varieties from the collection and promising breeding lines were used, selected according to the necessary characteristics and properties. The original parent pairs are selected so that they complement each other with the missing traits that need to be combined in a future new variety. At present, breeding work is conducted on the hybrids of the older generation.

When studying breeding lines of older generation hybrids, the following observations, accounting and analysis were carried out according to the method of the selection process:

- phenology for the main phases of plant development - germination, flowering, fruit formation and fruit maturation 10% and 75%;
- visual recording of plant diseases together with a phytopathologist;
- individual selection of plants that combine a complex of economic characteristics necessary for the future variety, according to the model of a new variety, and seed selection from the best healthy, highly productive, disease-resistant plants;
- plants are visually evaluated for each line. The best typical, healthy, high-yielding plants are marked with labels. From these plants we collect fruits for seeds. The description of the initial seed plants is based on the following characteristics: plant height in the free state, plant diameter (cm), number of side shoots, fruit weight (gr), shape, index, fruit color, number of chambers, content of Soluble Dry Matter (%);
- morphological description and biometric measurements of original seed plants;
- determination of fetal weight in grams and kilograms;
- determination of the content of soluble dry substances by Refractometer, %;
- preparation of seeds of individual selections from the best plants selected by a set of characteristics from promising breeding lines.

Results and its discussion.

Breeding of tomato. Selection lines were evaluated based on economically valuable traits and biological properties that need to be combined in the future tomato variety for table use. The study was conducted with the standard zoned Avicenna variety. The standard was located in 10 rooms. On each line, 40 plants are planted, the planting scheme is 70x30 cm, the area is 7 m^2, the predecessor is a pumpkin. Seedlings were planted in the ground in the third decade of April. The plants were planted after preliminary furrow irrigation on wet soil.

Phenological observations of the main phases of growth and development of tomato plants were carried out. Single 10% and mass 75% shoots, flowering, setting and ripening of fruits on the first inflorescences were noted. They distinguished the laying of the first inflorescence and the alternation of subsequent ones, taking into account the number of leaves. Biometric measurements of plant height during the mass maturation phase, plant diameter, and the number of side shoots in prospective lines were performed. The average mass of commercial fruit and the content of SDM% was determined by the Refractometer. The index of commercial fruit, the number of seed chambers, and the color of the fruit in the best selected breeding lines were determined. The selected lines are used to prepare seeds of individual selections for further breeding work with them.

As a result of the assessment of breeding material by economic characteristics and biological properties in comparison with the Avicenna standard, 20 lines were selected among the best.

Table 1 shows the characteristics of breeding lines for the main phenological phases of plant development during the growing season. The rating is given in comparison with the mid-season standard tomato variety Avicenna. Mass flowering on the first inflorescences came together on days 64-67 from mass shoots.

Mass fruiting is distinguished on the 74-75 day from seedlings. L-200-8S and L-200-8-9S lines are distinguished by the most amicable and early fruit formation. Mass ripening of the first fruits came on a par with the standard at 111 days from germination. In most lines, the first fruits ripened on days 114, 115, 116. They should be considered medium late for this indicator.

It is valuable that they are densely leafy of the determinant type, compact. The fruits of such plants are protected from sunburn.

L-200-8-2S, L-200-8-3S, L-200-9-14S and L-202-10S differ in amicable fruit formation and ripening of the first fruits. The amicable beginning of mass ripening of fruits in them was noted on the 116th day after mass shoots (Table 1).

Table 1.

Characteristics of promising tomato breeding lines

Sample name	Blooming, day	Fruit formation, day	Ripening, day	Plants, cm		Leafiness, point	Productivity, t/ha
				height	width		
Avicenna (st)	65	74	116	64	60	4,5	15,6
L-200-8-2S	64	72	116	65	62	4,5	20,5
L-200-8-3S	65	75	117	68	63	4,4	22,1
L-200-8-4S	66	72	119	65	60	4,6	20,7
L-200-9-12S	68	79	117	69	64	4,8	21,3
L-200-9-14S	64	77	116	64	60	4,8	22,4
L-200-9-15S	67	74	117	68	63	4,7	20,9
L-200-10-19S	69	76	117	72	65	5,0	21,2
L-200-10-14S	67	75	116	70	64	4,8	22,3
L-202-10S	68	75	116	68	64	5,0	22,7

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Plants are medium-sized, densely leafy, compact with a height of 64-72 cm. This type of plant provides tractor inter-row cultivation before the harvest begins to ripen.

The dense foliage of tomato plants during very hot summer temperatures protects the fruits from sunburn. We determined the plant foliage visually using a 5- point system. For the standard variety Avicenna, this indicator is determined at 4.5 points. Its fruits are almost completely covered with leaves, only individual fruits were not protected from the sun.

The yield of the studied lines ranged from 20,5 to 22,7 t/ha. The most productive were the lines L-202-10S, L-200-9-14S and L-200-10-14S (22,3-22,7 t/ha), and the lowest yield indicator was shown by the standard variety 15,6 t/ha.

Breeding of onion. In the early spring term, the Intermediate was tested by comparing the L-12-D, L-22-M, L-17-B lines with the comparative perspective grade. Onion seeds sprinkled on 18 March (photo 3.3). If the prospect of controlling the frontline sprouts are in the Istikbol 18 day, on L-12-D and L-22-M lines 15-16 day. The control variety was ripened on 148-day, l-12-D and l-22-M lines 144-day, L-17-B Line ripened on 152 day later than these.

The width of the shelter is 5,9 cm in the average control grade, 5,5 cm in the L-12-D line, 5,6 cm in the L-22-M Line, L-17-B is equal to 6,7 cm. The length of the shelter's neck is 8,6 cm in the control grade, 5,1 cm in the L-12-D line, 5,9 cm in the L-22-M Line, L-17-B 6,5 cm.

The Shape of the ovary is long, as the onions index is equal to 1.2 in the control varieties. L-12-D on line 1,2, l-22-M on line 1,1, L-17-B round in shape equal to 1,1 cm. Number of slots in the average control grade – 1,6 pieces, L-12-D line – 1,2 pieces, L-22-M line – 1,2 pieces, L-17-B – 1,6 pieces.

Biometric measurements showed that the number of onion leaves was 6,3 units in the control row, 5,6 units in the L-12-D line, 5,5 units in the L-22-M line, 5,8 cm in the L-17-B Line.

Leaf length averaged 33,2 cm in the control variety, 36,3 cm in the L-12-D line, 29,9 cm in the L-22-M line, and 30,3 cm in the L-17-B line. The average leaf weight of onion was 122,0 g in the control variety, 132,0 g in the L-12-D line, 134,6 g in the L-22-M line, and 165,0 g in the L-17-B line.

After removal of the main onion leaves, the bulb weight was 112 g in the control variety, 130,2 g in the L-12-D line, 125,4 g in the L-22-M line, and 155,0 g in the L- 17-B line (figure 1).



Figure-1. L-22-M and L-12-D lines of onions

The number of meat on the head of the onion and consists of the same 7 pieces on the L-22-M lines and the control variety, 7,4 pieces on the L-17-B Line. The thickness of each diagnosis was made up of control grades 2.9 mm, L-12-D – 3,0 mm, L-22-M – 3,0 mm, L-17-B – 2,9 mm. The thinner the L-17-B meat of onions, the more suitable it is for its use in salads (Table 2).

Table 2

Results of yield of medium-ripe L-12-D, L-22-M, L-17-B lines in the spring test garden

Variety, line	Average weight of onion, g	Productivity, t/ha		Commodity yield relative to total yield,%	Total yield relative to control,%
		general	marketable		
Istikbol (standart)	112,3	28,2	24,7	87,6	100
L-12-D	130,2	35,2	32,0	91,0	124,8
L-22-M	124,3	34,0	31,2	91,8	120,6
L-17-B	155,0	34,7	30,5	87,9	123,0

Productivity on the L-12-D line is 35,2 t/ha or 124,8% of the control variety, on the L-22-M line it is 34,0 t/ha or on the control variety 120,6% and on the L-17-B line 34,7 t/ha or 123,0% higher than the control variety.

Breeding of cucumber. Field experiments in the test garden were carried out in the morning and evening in order to determine the stability of fruit quality, yield and resistance to fake flour dew and flour dew disease of the L-6 line in the test. As a comparative variety, the local Navruz variety was taken for the salad L-6 line.

According to the results of phenological observations carried out during the experiments of the next period, the germination of seedlings in the test L-6 line and comparable Navruz variety germinated by 25% in 3-4 days and 75% in 6-7 days. The opening of the paternal flowers was 35-38 days on the L-6 line, 2 days later than in the comparative Navruz variety. In the comparative Navruz variety, this figure was 33-36 days.

One of the components that ensures early ripening in cucumber is the opening time of the mother flowers. For this reason, determining the opening time of mother flowers is of some practical importance. According to phenological observations in the samples, the opening of the mother flowers on the L-6 line was observed 7-13 days earlier than the comparative variety - 33-37 days. In the comparative Navruz variety, this figure was 40-50 days.

One of the components that make up for morning sickness in the basement is the opening period of motherhood flowers. Therefore, the determination of the opening time of motherhood flowers is of some practical importance. According to the phenological observations made in the samples, the opening of motherwort flowers on the L-6 line was observed 7-13 days earlier than the comparative Variety, that is, on 33-37 day. In comparative Navruz, this indicator was equal to 40-50 days.

The determination of the technical ripening phase of fruits in the cellar is one of the complex processes, if the fruit is

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thawed, the yield decreases or the quality of the fruit decreases if it is cut later. According to the phenological observations conducted on the determination of the technical ripening day of fruits in accordance with the same rules, the technical maturity of fruits in the test L-6 line was observed 8-12 days earlier than in the comparative variety. Accordingly, on the L-6 line, this figure was 40-46 days, while in the comparative Navruz variety this figure was equal to 48-58 days.

In the samples, the term period was slightly different from each other, resulting in cross-variability. The term period of the L-6 line in the test lasted from 20 June to 10 August, the term period was 50 days. This means that by the number of terms from the comparative Navruz variety is more than 2-3. In comparative Navruz, the term period continued from 28 June to 13 August, and the term period was 45 days.

Within the fairytale period, the selection generated continuous variability in the length of the main stem of the samples, the number of side branches and the total length of the side branches, according to the results of biometric measurements conducted in experiments in the Test Garden. According to him, the length of the main stem of the plants of the L-6 line in the test was from 115 cm to 150 cm, the number of side branches from 2,5 to 3,5 cm, the total length of the side branches from 195 cm to 220 cm, forming a variable amplitude. The average arithmetic value of the length of the main stake on the L-6 line was 132±0,13 cm, 3±0,16 pieces by the number of side branches and 208±0,06 cm by the total length of the side branches. The amplitude of variability in the comparative navel varieties fluctuated from 75 cm to 95 cm in the length of the main stem, from 1.9 to 2.3 cm in the number of side branches and from 155 cm to 180 cm in the total length of the side branches. In comparative Navruz, the average arithmetic mean for the length of the main stem was 85±0,12 cm, by the number of side branches 2,1±0,09 pcs, and by the total length of the side branches 168±0,07 cm. Based on the above results, we can say that the length of the main stem of the L-6 line in the test is 47 cm longer than the comparative Navruz variety, the number of side branches is more than 0,9 thousand, and the total length of the side branches is 40 cm longer.

Another aspect that will be the main focus in the selection test garden is a fairy tale and an expression from the determination of the total yield. According to the figures from the calculations, the total yield of the L-6 line in the test was 27,2 tons per hectare, from which the fairy-tale yield was 5,7 tons. This indicator is 7,7 tons per hectare or 42% higher than the total yield compared to the comparative variety. And in the fairy tale productivity was determined 1,9 tons per hectare or 50% higher than the comparative grade. In comparative Navruz, the total yield was 19,5 tons per hectare, while the fairy-tale harvest was 3,8 tons (table 3).

Table 3

The choice is a fairy tale and general yield of tested cucumber samples in a fairy tale term in a test garden

Variety, line	Average weight of onion, g	Productivity, t/ha		Commodity yield relative to total yield,%	Total yield relative to control,%
		general	marketable		
stikbol (standart)	112,3	28,2	24,7	87,6	100
L-12-D	130,2	35,2	32,0	91,0	124,8
.-22-M	124,3	34,0	31,2	91,8	120,6
L-17-6	155,0	34,7	30,5	87,9	123,0

Another of the main components that make up the top of the crop in the cucumber crop is the weight of this fruit. As a result of the findings, it became known that the average weight of the technical fruit of the L-6 line was 90 g. In comparative Navruz, this weight was about 85 g.

The quality indicators of the technical fruit of the cucumber crop are determined as a result of the degustation analysis, and the first criterion for the evaluation of the bun is the presence or absence of alkaloid of its appearance – shape, length, color and structure of the surface, the second – taste, acidity, kumarin (a biochemical substance that gives bitterness to the fruit), the In comparison with the same rules, the technical fruits of the samples were evaluated in the Test Garden as follows: according to which The shape of the technical fruit of the L-6 line in the test is cylindrical, dark green, the surface is flat and glossy, length 10-12 cm, weight 90 g, the taste is good and sour, there is no bitterness. The technical fruit of the comparative navel variety is cylindrical in shape, Green in color, the surface is flat and chitinous in appearance, length 8-10 cm, weight 85 g, the taste is good and moderately sharp, there is no bitterness, and the consistency of the flesh is medium density.

From the results of the comparisons, it is known that the appearance, taste, consistency of the technical fruit of the L-6 line and the fact that the consistency of the fruit flesh has an average density indicates that this line fully corresponds to the requirements for them cucumber.

Breeding of watermelon. Watermelon selection. L-9 (VS_1F_{11} × (L-Ch × L-27-26) × L-27-26), L-21-17 (VS_1F_{10} x (L-Ch × New Super Dregon)), L-25-17 (Samples of VS_1F_{10} L-Ch × Red Comet), F_5 L-Ch × Marble hybrids (figure.2)were planted and studied in comparison with the Shark Nemati variety.

The timing of the opening of the mother flower of the watermelon plant determines whether the varieties ripen early or late. Phenological observations in the studied hybrids showed that in all hybrids the paternal flowers opened on average 52-53 days and the maternal flowers on average 61-63 days. The standard variety Shark Nemati opened in 53 days of maternal flower and 67 days of paternal flower.

It follows that all the sample samples studied are earlier than the standard variety.

In previous years, watermelon fruits ripened in 80-91 days, but this year the sharp drop in air temperature after planting and chronic flooding negatively affected the development of watermelon plants. The fruits ripened late and the fruits ripened in 95-105 days.

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Figure.2. F_5 L-Ch × Marble hybrids and L-25-17 (Samples of VS_1F_{10} L-Ch × Red Comet) of watermelon.

The varieties planted in the orchard were compared with the previously regionalized variety Shark Nemati. Shark Nemati variety is lush, the leaves are deeply grooved, the fruit is round, green, the flowers are thin dark green. The average weight of the fruit is 3,7-9,5 kg, the thickness of the skin is 1,0 cm, the hardness is 262 g/mm^2, the dry matter content is 10,8% on average, the top is 12,5%. The flesh is red and the seeds are black (table 4).

Table 4

Comparing test of watermelon phenological indicators of hybrids of the upper generation in the garden

Variety, line	Day, until the germination of			Total yield		Commodity harvest		Commodity yield, %	
	the opening of the paternal flower	the opening of the maternal flower	ripening	t/ha	relative to st, %	t/ha	relative to st, %	ratio to total yield	relative to st, %
L-9	53	63	99	32,8	100	26,9	100	82,0	100
L-21-17	52	61	95	33,1	101	27,2	101,1	82,3	100,4
L-25-17	52	63	96	29,7	90,5	24,2	90	81,5	99,4
Shark nemati	53	67	102	31,5	98,0	26,1	97	83,0	101,2

In the comparative test garden, the prospective lines of the watermelon were tested by comparing the blessings of the comparative East. At the same time, the total yield of the Shark Nemati variety was 32,8 t/ha, the quality yield was 26,9 t/ha, and the ratio of quality yield to total yield was 82,0%.

L-9 (L-Ch x L-27-26) × L-27-26 line with a total yield of 33,1 t/ha, a quality yield of 27,2 t/ha, the ratio of quality to total yield was 82,3 %.

The total yield of the L-21-17 (L-Ch x New Super Dragon) x L-Ch line was 29,7 t/ha, the quality yield was 24,2 t/ha, and the ratio of quality yield to total yield was 81,5%.

The total yield of the L-25-17 (L-Ch x Red Comet) line was 31,5 t/ha, the quality yield was 26,1 t/ha, and the ratio of quality yield to total yield was 83,0% (table 7).

Breeding of melon. Comparative testing of new lines resistant to dew disease was carried out at the Tashkent experimental site of the institute. VS2F11 (Dorado x Obi navvot) × Obi navvot hybrid was obtained on the basis of individual selection, small size, different appearance L-160 and L-161 lines were tested in comparison with Kichkintoy variety with normal fruit included in the State Register.

As a result of phenological observations, germination of L-160, L-161 lines and comparative Kichkintoy variety was 14 days, the difference in opening of paternal flowers was almost one day in Kichkintoy variety, 38 days, in L-161 and L-160 lines was 39 days.

The opening of the maternal flowers was 47 days on the L-161 line, 46 days on the L-160 line, and 45 days on the comparative Kichkintoy variety.

In terms of maturity, the L-161 line matured 6 days earlier than the comparative Kichkintoy variety. The L-160 line was 11 days later than the comparative variety.

As a result of the experiments, the biometric measurements of the standard variety and the new lines showed that the overall development of the palate was 180.5 cm longer than the L-161 line (figure 3) and 198.5 cm longer than the L-160 line compared to the comparative Kichkintoy.



Figure.3. L-161 line of melon.

The main stem lengths of L-160 and L-161 lines are 197.0 cm and 139.5 cm, the total number of side branches of 157.5 cm stalks in comparative Kichkintoy variety is 4 and 5 in L-160 and 161 lines, 4 in comparative variety.

The appearance of the L-160 line is similar to that of the Obi novvot variety, some greenish-brown in color. The fruit is moderate and the weight is average 1,6 kg, compared to 0.9 kg in the Kichkintoy variety (Fig. 3). The flesh is white, 3,8-4,0

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cm thick, the seeds are very small. The content of soluble dry matter in the average is 16.4%, the highest is 18.0%, in the comparative variety this figure is 11,8% and 15,5%.

The total yield was 21,4 t/ha, the quality yield was 18,4 t/ha, which was 86 % of the total yield. Selection work will be continued with this line on increasing disease resistance.

The average weight of the fruit of the comparative Kichkintoy variety is 0,9 kg, the shape is spherical, the surface is flat, yellow, completely covered with a fine net. The flesh is light green in color and has a dense, soft, pleasant odor. The sugar content was 11,8-15,5%, the total yield was 18,5 t/ha, the quality yield was 15,4 t/ha, and the total yield was 83.2% (table 5).

Table 5

Yields of new melon lines in the comparative testing garden

Variety, line	Total yield		Commodity harvest		Commodity yield,%	
	t/ha	relative to st,%	t/ha	relative to st,%	ratio to total yield	relative to st,%
Kichkintoy (st)	18,5	100	15,4	100	83,2	100
L-160	21,4	115,7	18,4	119,5	86,0	103,4
L-161	22,5	121,6	19,7	127,9	87,2	104,8

The fruit of the L-161 line is normal, the average weight of a quality fruit is 1,8 kg, the fruit is round in shape, lemon-colored, without flowers, some have white-yellow spots. The fruit is thick, some 3/4 part covered with netting, slightly sliced. Flesh is white, 3,7–4,0 cm thick, tender, soft, honey is delicious. The average soluble dry matter content is 16.5%, with a maximum of 19,0%. The total yield was 22,5 t/ha, the quality yield was 19,7 t/ha, the total yield was 121,6% higher than the comparative variety, and the quality yield was 127,9% higher.

Conclusion

Breeding of tomato. In conclusion on the section, it should be noted that as a result of a detailed economic and biological assessment in the breeding nursery of tomato lines (infusing), the source material was isolated for breeding a mid-season table variety with good commercial qualities of the fruit. The breeding lines L-202-10S, L-200-9-14S, L-200-10-14S and L-200-8-3S should be considered promising for the creation of a mid-season table variety with good taste and marketability.

Breeding of onion. The sample has a high yield on the L-12-D line in the test garden, with a total yield of 35,2 t/ha or 124,8% of the standard variety, and a yield of 34,0 t/ha on the L-22-M line or control yield on the L-17-B line was 120,6% and 34,7 t/ha or 123,0% higher than the control Istikbol variety.

Breeding of cucumber. The total yield of the L-6 line in the test garden was 27,2 tons per hectare or 42% of the comparable Navruz variety, and 5,7 tons per hectare or 50% of the comparable Navruz variety. The total yield of the L-6 line in the evening is 21,5 tons per hectare or 30% of the comparable Navruz variety, 2,3 tons per hectare of the comparative Navruz variety or 64% of the comparable Navruz variety, which means that the L-6 line in the test is most likely promising.

Breeding of watermelon. In the comparative test garden, the prospective lines of the watermelon were tested by comparing the blessings of the Shark Nemati. At the same time, the total yield of the Shark Nemati variety is 32,8 t/ha, 33.1 t/ha on the L-9 ((L-Ch x L-27-26) × L-27-26 line), on the L-21-17 (L-Ch x New Super Dragon) x L-Ch line was 29,7 t/ha, on the L-25-17 (L-ChxRed Comet) line it was 31,5 t/ha, and the quality yield in varieties and lines ranged from 81,5% to 83%. These created lines are submitted to the state varietal test and a certificate is obtained.

Breeding of melon. In the comparative testing garden, promising L-160 and 161 lines were tested against the Kichkintoy variety included in the state register.

The appearance of the L-160 line is similar to that of the Obi novvot variety, some greenish-brown in color. The total quality yield was 21,4 t/ha, or 18,4 t/ha, or 86,0% of the total yield. The total yield of the Kichkintoy variety was 18,5 t/ha, the quality yield was 15,4 t/ha, which was 83,2% of the total yield. With this line, selection work to increase disease resistance will continue.

The fruit of the L-161 line is normal, the average weight of a quality fruit is 1,3 kg, the fruit is round in shape, lemon-colored, without flowers, some have white-yellow spots. The average soluble dry matter content is 16,0%, the highest is 19,0%. The total yield was 22,5 t/ha, the quality yield was 19,7 t/ha, the total yield was 121,6% higher than the comparative variety, and the quality yield was 127,9% higher.

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